Straw Bale Construction

A Path to Sustainability

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Building with Straw

- Energy Efficient
- Structurally Superior
- Community Building and Personal Aesthetics

Energy Efficiency

- Low Embodied Energy of Straw
  - Uses an agricultural waste product
  - Renewable as next year's grain crop
- High "R" Value (R 34 –R 55) in walls

Healthy Material Choices

- Wall package contains no VOC's (volatile organic compounds)
- Earthen plasters for interior finishes
  - Reduces construction waste & hauling
  - Low embodied energy ingredients
  - Painting not required
- Stucco/Plaster serves as masonry mass

Structural Integrity

- Straw bale houses more earthquake resistant
- Two hour fire wall
- Exceptionally strong
  - 100 lbs/lf lateral force load strength*
  - 4000 lbs/lf compressive load strength*

*when finished with cement stucco

Community Benefits

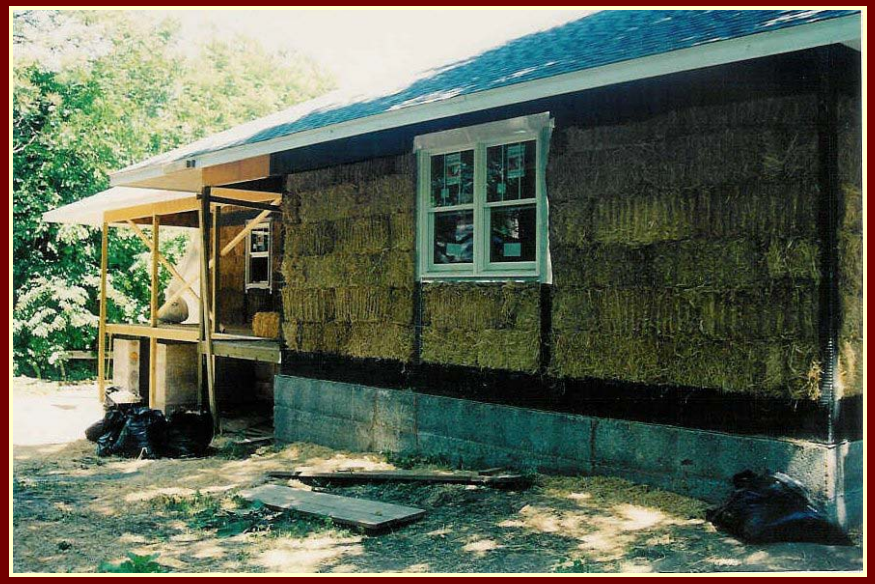
- “High Tech” expertise not required
- Encourages community building through participation in building
- Supports local agriculture
- Economical
  - 1 straw bale = insulation + sheathing + studs + drywall
  - $1/sqf straw bale; $3.41/sqf standard construction with same R-value

Aesthetics

- Design flexibility
  - Creativity in construction
  - Biomorphic to angular/modern

Urbana Straw Bale “Green” Features

- Rastra Foundation Walls (R-34, 85% recycled styrofoam ICF)
- Rye Straw Bales from Organic Farmer



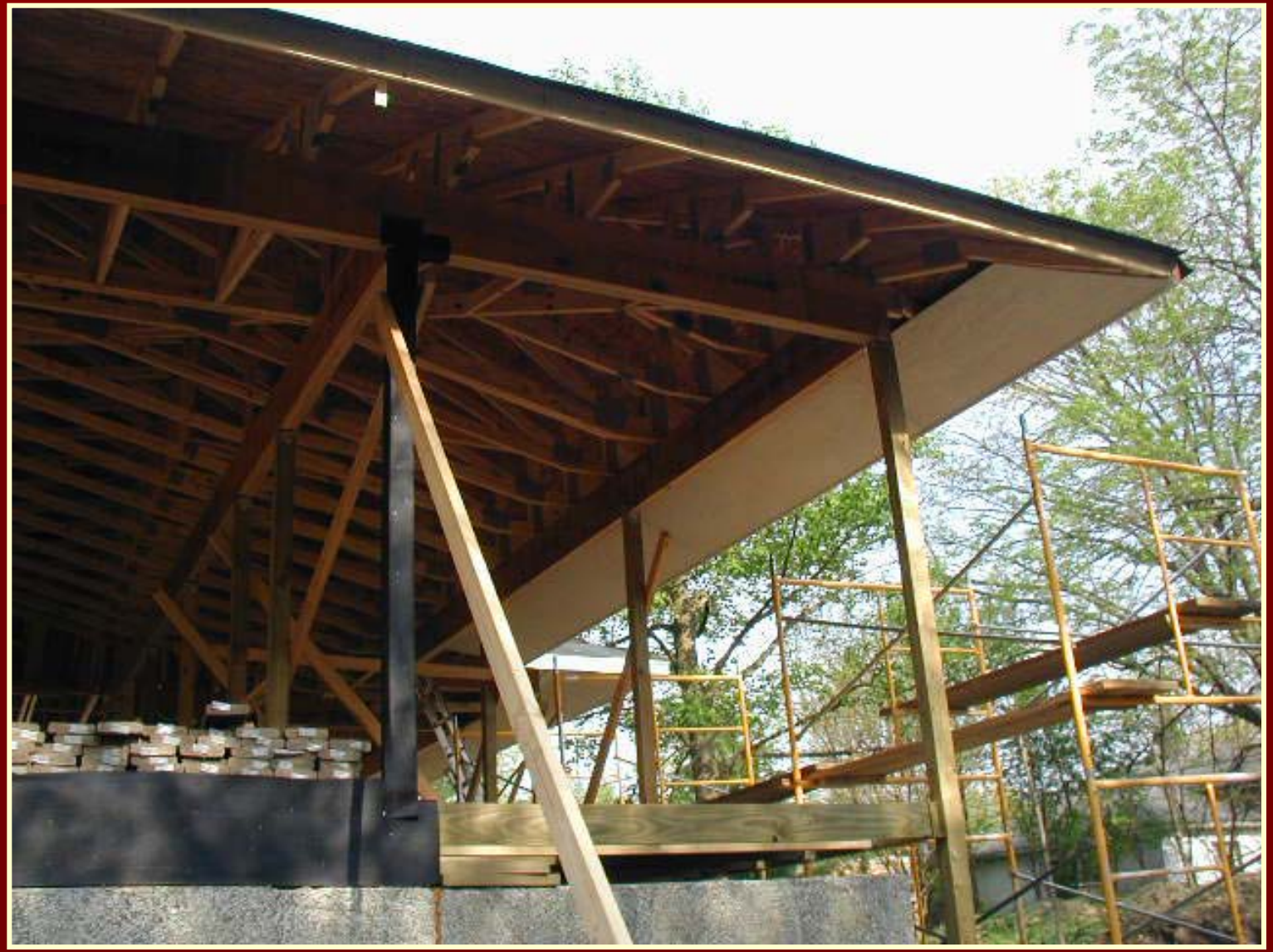
- Cellulose Ceiling Insulation (recycled newspaper)
- Reclaimed Maple Great Room Floor

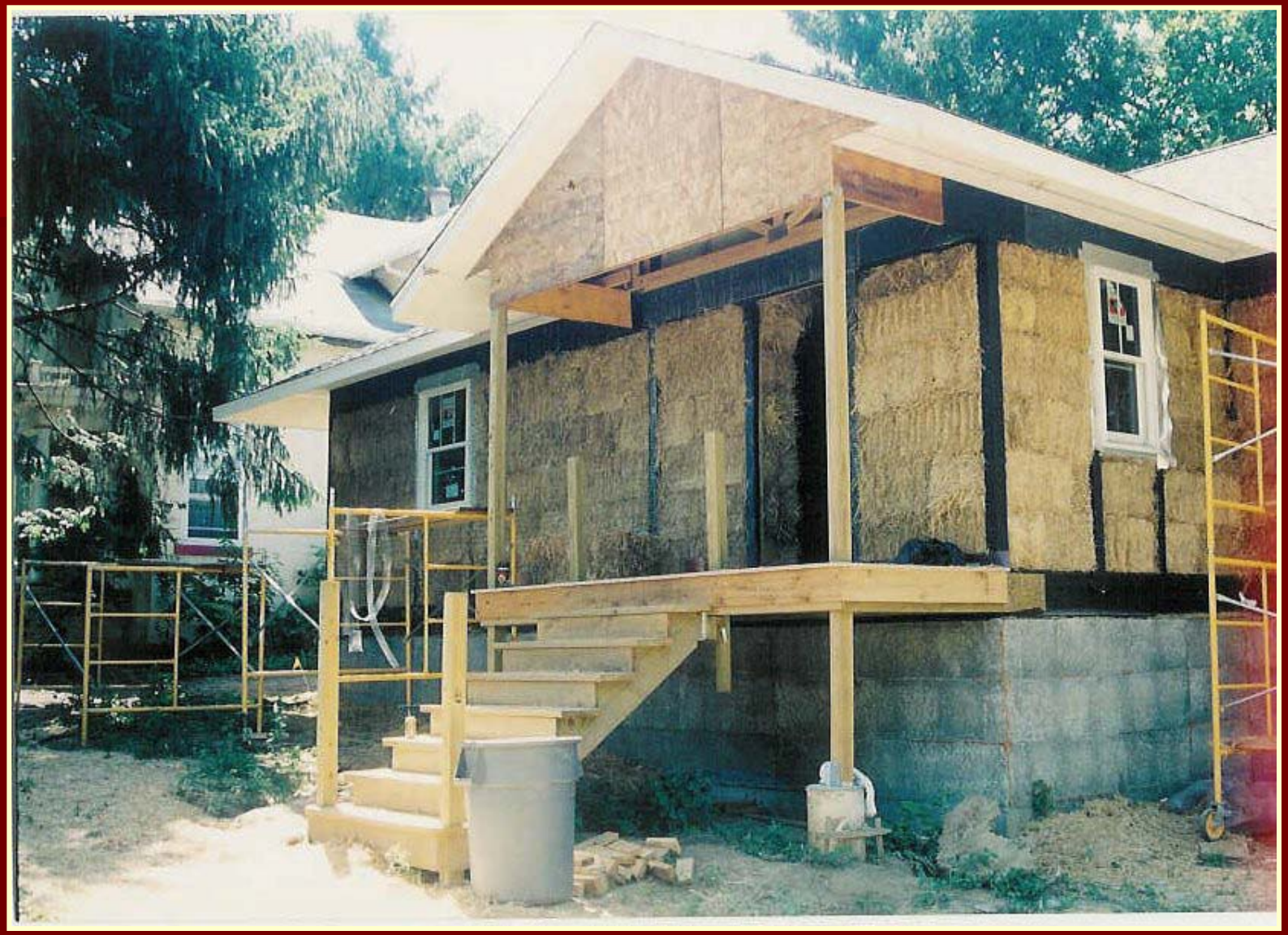
- Bamboo Floors in Bedrooms
- Reclaimed Yellow Pine Jambs, Interior Doors, and Trim
- Reclaimed Slate Countertops

- Recycled Porch Flooring
- High Efficiency Gas Forced Air Furnace
- Corn Stove- lower level; Wood Stove- first floor
- Low E glass for windows/skylights

- Engineered Lumber Bearing Beams and Floor Joists
- Trussed Roof System

- Natural Paints- 1st floor interior
- Outdoor Kitchen
- Outdoor Clothes Line



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